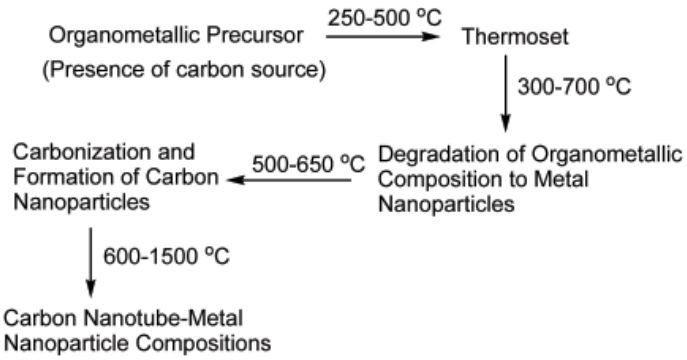
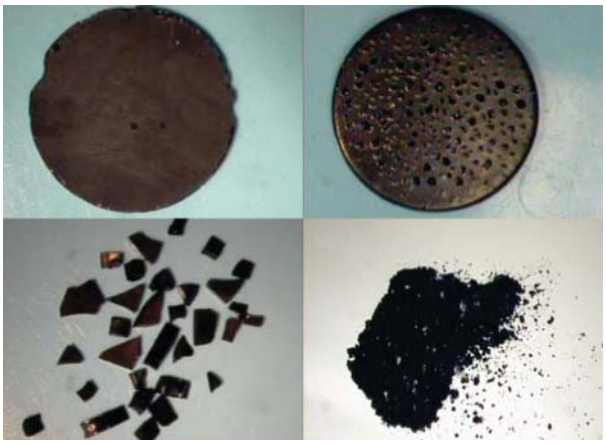
Inexpensive Synthesis of Carbon Nanotubes in Solid Domain





CNT compositions produced by NRL method

DESCRIPTION:

Our novel method of synthesizing carbon nanotube (CNT) and metal nanoparticle compositions involves melt processable organometallic compounds and polymers heat treated to elevated temperatures under atmospheric pressure. Formation of single-walled carbon nanotubes (SWNTs) and metal nanoparticles occurs at the atomic and molecular levels in the solid carbonaceous domain during the carbonization process.

ADVANTAGES/FEATURES:

- Shaped components (solid, film, and fiber)
- Low-cost, high-yield, and large-scale production of SWNTs
- Development of new technologies
- Useful structural, electric, and/or magnetic properties
- Potential broad impact on nanotechnology industry
- Licensable under U.S. Patents 6,890,504 B2; 6,884,861 B2; 6,846,345; 6,770,583 B2; and 6,673,953 B2
- Patents pending: Navy cases 96,675; 96,414; 83,778; 96,385; 84,323; 96,414; 96,388; 96,387; and 96,386

APPLICATIONS:

- Microelectronic/nanoelectronic devices
- Batteries and fuel cells
- Superconductive and magnetic devices
- Drug delivery systems
- Structural composites

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